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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/615,503	07/13/2000	NOBUAKI HASHIMOTO	101929.02	3462
25944	7590	11/19/2003		
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			EXAMINER GRAYBILL, DAVID E	
			ART UNIT 2827	PAPER NUMBER

DATE MAILED: 11/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/615,503	Applicant(s) HASHIMOTO, NOBUAKI	
	Examiner David E Graybill	Art Unit 2827	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 10 and 11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 12-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 5) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 6) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

In the rejections infra, reference labels are generally recited only for the first recitation of identical claim language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-4, 9 and 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shim (5905633).

At column 1, line 18 to column 2, line 1, and column 3, line 51 to column 5, line 46, Shim teaches the following:

A method of fabricating a semiconductor device comprising: (a) attaching a plurality of semiconductor chips 20 to a tape 60; (b) cutting the tape to obtain substrates after the step (a) (see column 2, lines 12-35, and column 4, lines 26-38); and (c) providing a plurality of external terminals 50 on each of the substrates, wherein the steps (a) and (b) are carried out in a reel-to-reel transport system; attaching a reinforcing member 10 to the tape in positions corresponding to each of the semiconductor chips, before the step (b), wherein the tape is cut into regions 64 each including one of the semiconductor chips in the step (b), wherein the tape is cut into regions each including one of the semiconductor chips in the step (b), wherein a plurality of device holes 61 are formed in the tape, and leads 11 are formed on the tape, which end portions project into the respective device holes; and wherein each of the semiconductor chips is disposed within a respective one of the device holes, and the electrodes ["chip pads"] of the semiconductor chips and the leads are bonded in the step (a) wherein each of the semiconductor chips is bonded to the tape in a face-up configuration in the step (a), wherein the electrodes of the semiconductor chips and leads formed on the tape are electrically connected by means of wires 30 in the step (a); attaching a heat radiating member 64 to each of the semiconductor chips; attaching a heat radiating member to each of the semiconductor chips; attaching the heat radiating member before the step (b), with a reel-

to-reel transport system, further comprising: attaching the heat radiating member before the step (b), with a reel-to-reel transport system.

A semiconductor device fabricated by the method as defined in 1.

A circuit board ["mother board"] having mounted the semiconductor device as defined in 18.

An electronic apparatus ["BGA package"] including the semiconductor device as defined in 18.

However, Shim does not appear to explicitly teach providing the plurality of external terminals on each of the substrates after the step (b).

Nevertheless, it would have been an obvious matter of design choice bounded by well known manufacturing constraints and ascertainable by routine experimentation and optimization to choose the particular claimed sequence because applicant has not disclosed that the limitation is for a particular unobvious purpose, produces an unexpected result, or is otherwise critical. Moreover, it is well established that, in a well known process, the order of performing process steps is prima facie obvious in the absence of new or unexpected results. Ex parte Rubin 128 USPQ (PO BdPatApp 1959).

Claims 1-9 and 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shim (5905633) as applied to claims 1-4, 9 and 12-20 supra, and further in combination with Marrs (5583378).

Although Shim does not appear to explicitly teach providing the plurality of external terminals on each of the substrates after the step (b), at column 9, lines 33-41; column 10, lines 11-49; and column 15, lines 33-45, Marrs teaches providing a plurality of external terminals 218J on each of substrates 280G after steps of attaching a plurality of semiconductor chips 202H to a tape 299E and cutting the tape to obtain the substrate. Furthermore, it would have been obvious to combine the teachings of Marrs and Shim because it would facilitate cost effective and efficient mass production.

Also, Shim does not appear to explicitly teach wherein the tape is cut into regions each including two or more of the semiconductor chips in the step (b), and cutting each of the substrates into regions, each including one of the semiconductor chips, after the step (c). Nevertheless, as cited, Marrs teaches wherein a tape is cut into regions 280G each including two or more semiconductor chips, and cutting each of the substrates into regions 270F, each including one of the semiconductor chips, after the step of providing the plurality of external terminals on each of the substrates. In addition, it would have been obvious to combine the teaching of Marrs with the teachings of Shim because it would facilitate cost effective and efficient mass production.

Applicant's remarks filed 7-18-3 have been fully considered and rendered moot by the rejection supra.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Any telephone inquiry of a general nature or relating to the status (MPEP 203.08) of this application or proceeding should be directed to Group 2800 Customer Service whose telephone number is 703-306-3329.***

Any telephone inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Graybill at (703) 308-2947. Regular office hours: Monday through Friday, 8:30 a.m. to 6:00 p.m.

The fax phone number for group 2800 is (703) 872-9306.



David E. Graybill

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Primary Examiner  
Art Unit 2827

D.G.  
16-Nov-03